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# ABSTRACT

A method for in-situ modernization of a heterogeneous synthesis reactor, comprises the steps of providing an unperforated cylindrical wall (15) coaxial to the gas outlet wall (8) in a catalytic bed (6) of the radial or axial-radial type, the unperforated cylindrical wall (15) extending from an upper end (8a) of the gas outlet wall (8) for a portion of the same of a prefixed length, so as to define a free-space (16) between the gas outlet wall (8) and the unperforated wall (15), for the passage of a part of the gas leaving said catalytic bed (6), and of providing means of closing the free-space (16) between the unperforated wall (15) and the gas outlet wall (8), in proximity of the upper end (8a) of the latter, preventing thereby a bypass of the catalytic bed or a recycling to the same of the gas entering respectively leaving the reactor. Thanks to the above steps, the present method allows to operate with a reduced amount of catalyst in the catalytic bed, keeping however the fluid dynamics and pressure drop characteristics unchanged.

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